

U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-111-EA

CASEFILE/PROJECT NUMBER (optional): COC 068811, COC 68810, COC 400, COC 68811

PROJECT NAME: 8 APD's

LEGAL DESCRIPTION: T. 2S, R. 98W, sec. 31 (298-31-6)
T. 2S, R. 98W, sec. 27 (298-27-7)
T. 2S, R. 98W, sec. 26 (298-26-9)
T. 2S, R. 98W, sec. 26 (298-26-8)
T. 2S, R. 98W, sec. 31 (298-31-2)
T. 2S, R. 98W, sec. 31 (298-31-3)
T. 2S, R. 98W, sec. 31 (298-31-4)
T. 2S, R. 98W, sec. 31 (298-31-5)

APPLICANT: Riata Energy, Inc.

ISSUES AND CONCERNS (optional): None

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: Onsites were conducted on 1-11-06 and 1-12-06.

Proposed Action: Riata Energy, Inc. is proposing to drill eight (8) gas well locations with associated access roads and pipelines. The table below shows the proposed disturbance for each well and associated access and pipelines.

Well Name	Surface Owner	Location Size (Ac)	Access Rd. Disturbance (Ac)	Pipeline Disturbance	Acres Disturbed (Total)
298-31-6	Federal	265' X 225' (1.37 ac)	320' X 30' (.22 ac)	Included in Access Rd.	1.59
298-27-7	Federal	265' X 255' (1.55 ac)	4200' X 30' (2.89 ac)	Included in Access Rd.	4.44
298-26-9	Federal	265' X 225' (1.37 ac)	4424' X 30' (3.05 ac)	Included in Access Rd.	4.42
298-26-8	Federal	265' X 225' (1.37 ac)	629' X 30' (.43 ac)	Included in Access Rd.	1.8
298-31-2	Federal	265' X 225' (1.37 ac)	1379' X 30' (.95 ac)	Included in Access Rd.	2.32
298-31-3	Federal	265' X 225' (1.37 ac)	522' X 30' (.36 ac)	Included in Access Rd.	1.73
298-34-4	Federal	265' X 225' (1.37 ac)	4756' X 30' (3.28 ac)	Included in Access Rd.	4.65

Well Name	Surface Owner	Location Size (Ac)	Access Rd. Disturbance (Ac)	Pipeline Disturbance	Acres Disturbed (Total)
298-31-5	Federal	265' X 225' (1.37 ac)	637' X 30' (.44 ac)	Included in Access Rd.	1.81
Total Project Acres					22.76
Total BLM Acres					22.76

Total disturbance for the project will be 22.76 acres.

Existing roads and newly constructed roads on surface under the jurisdiction of any Surface Managing Agency shall be designed and constructed according to the standards provided in BLM Manual 9112. Existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well. Low water bars and water dips will be constructed as needed along the access route. The need for surfacing material is not anticipated; however, if it is necessary due to inclement weather, then surfacing will be applied to the access road and well pad. Surface disturbance and vehicular traffic will be limited to the approved location and approved access route.

All permanent structures (onsite for 6 months or longer) constructed or installed (including oil well pump jacks) will be painted a flat, non-reflective, Juniper Green color to match the standard environmental colors, as determined by the Rocky Mountain Five-State Interagency Committee. All facilities will be painted within six-months of installation. Facilities required to comply with the Occupational and Safety Health act (OSHA) will be excluded. Compaction and construction of the berms surrounding the tank batteries will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berms must be constructed to contain a minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.

All portions of the pad not required for production operations will be reclaimed. A dike will be constructed completely around the production facilities (i.e. production tanks, water tanks, and/or heater treater). The dikes for the production facilities will be sufficiently impervious, made of a non-porous material and designed to contain one hundred and ten percent of the capacity of the largest tank. Any production pits will be fenced with at least four (4) strands of barbed wire and held in place by side posts and corner H-braces.

All access roads will be upgraded and maintained as necessary to prevent erosion and accommodate year-round traffic. Any necessary pits will be fenced to prevent wildlife entry. The reserve pit will be properly backfilled and will not be used for production operations. Water will be pumped or hauled to the location along the approved access roads. No water wells are to be drilled. Surface and subsoil materials in the immediate area will be utilized. No construction materials will be removed from Federal lands. Where surfacing is needed for the access roads, it will be obtained from the spoils material in the reserve pit. Any materials to be used which are under BLM jurisdiction shall be approved in advance, as per CFR 3610.2-3.

Drill cuttings are to be contained and buried in the reserve pit. Trash and garbage will be contained in a closed receptacle. Burning and/or burying is not authorized unless previously approved by the authorized Officer (AO) during winter conditions. Contents from trash

receptacle will be hauled to an approved landfill. Reserve pit will evaporate or authorization for removal and disposal will be requested from the AO prior to backfilling the reserve pit. The salts and/or chemicals which are an integral part of the drilling system will be disposed of in the same manner as the drilling fluid. A chemical porta-toilet will be furnished with the drilling rig.

The produced fluids will be produced into a test tank until such time as construction of production facilities is completed. Any spills of oil, gas, salt, water or other produced fluids will be cleaned up and removed.

Approximately 6 inches of topsoil will be stripped from this location and stockpiled at the site. A plastic pit liner will be installed in the reserve pit. It will be of sufficient mil to prevent seepage. Excavation of the reserve pit will require that on half of the fluid capacity is below the ground level. Reserve and produced water pits containing oily residue must be overhead flagged. Pits remaining after the drilling period which store or are expected to store production fluids will be wired or netted to prevent or discourage entry by larger birds attracted to sources of water, including raptors and waterfowl. At a minimum, wire will be stretched over the entire length and breadth of the pit at intervals not exceeding three feet, and made permanently conspicuous either by choice of material or installation of flagging material evenly distributed across the pit at a minimum rate of one flag per 18 square feet.

These pits must be fenced with 28-inch, sheep tight mesh wire with two strands of barbed wire above and separated by approximately 6 inches. The reserve pit must be fenced on three sides during drilling; the fourth side must be fenced immediately after the rig is released. Berms will be required to keep water runoff out. A minimum of 2 feet freeboard will be maintained between the maximum fluid level and the top of the berm. In the event downhole operations threaten to exceed the required 2-foot freeboard, regarding reserve pit fluids, immediate notification will be provided to the AO with concurrent steps taken to minimize the introduction of additional fluids, until alternative containment methods can be approved. The backfilling of the reserve pit will be completed within 30 days after conditions exist and will meet the following requirements:

- Backfilling will be done in such a manner that the muds and associated solids will be confined to the pit and not squeezed out and incorporated into the surface materials.
- There will a minimum, of 5 feet of cover (overburden) on the pit.
- When the work is completed, the pit area will support the weight of heavy equipment without sinking and over time shall not subside over 6-inch depth.

Reclamation will be done as requested by the BLM. In the event a producing well is completed, the unused areas of the well location will be recontoured to appropriate configuration (that allows lease operations and alleviates steep cut and fill slopes, minimizing accelerated erosion). Some of the stockpiled topsoil will be redistributed over the unused area and revegetated with approved seed mixture. This will be done immediately after proper backfilling and recontouring of the reserve pit has occurred. A seed mixture will be provided by the BLM in the Conditions of Approval. Use certified seed. Seed certification tags must be submitted to the Field Manager. Additional seed applications may be required to accommodate specific site conditions or if initial seed germination has failed. The goal for rehabilitation of any disturbed area shall be the permanent restoration of original site conditions and productive capability.

In the event of a dry hole, the location will be recontoured to the original grade, top soiled, seeded with approved seed mixture. The topsoil will be evenly distributed over the location. All pits, cellars, rat holes, and other bore holes unnecessary for further lease operations excluding the reserve pit, will be backfilled immediately after the drilling rig is released. Pits, cellars and/or bore holes that remain on location must be fenced as specified for the reserve pit.

Control of noxious weeds will be required through successful vegetation establishment and/or herbicide application. Applications of the herbicide are prescribed; however, it is the responsibility of the lease operator to insure compliance with the local, state, and Federal laws and regulations, as well as labeling directions specific to the use of any given herbicide. Application of pesticides and herbicides on public lands will conform to BLM Manual H-9011-1 and 9015. Applications of herbicides would be under the field supervision of an EPA certified pesticide Applicator.

The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days, the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places,
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming *in situ* preservation is not necessary),
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

All state and local permits required for proposed operations will be obtained prior to commencing any activity that may be affected by such authorization.

No Action Alternative: In the no-action alternative the wells, access roads and flowlines would not be permitted; therefore there would not be any new disturbance.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: None

NEED FOR THE ACTION: To respond to the request by applicant to exercise lease rights and develop hydrocarbon reserves.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Pages 2-5

Decision Language: “Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values.”

**AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES /
MITIGATION MEASURES:**

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a ten mile radius of any special designation air sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of inhalable particulate matter, specifically particles ten microns or less in diameter (PM₁₀) associated with fugitive dust. In addition, slight increases in the following criteria pollutants: carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, and sulfur dioxide may also occur during periods of construction due to the combustion of fossil fuels. Also, non-criteria pollutants such as visibility, nitric oxide, air toxics (e.g. benzene) and total suspended particulates (TSP) may also experience slight increases as a result of the proposed actions (no national ambient air quality standards have been set for non-criteria pollutants). Unfortunately, no air quality monitoring data is available for the survey area. However, it is apparent that current air quality near the proposed location is good because only one location on the western slope (Grand Junction, CO) is monitoring for criteria pollutants other than PM₁₀. Furthermore, the Colorado Air Pollution Control Division (APCD) estimates the maximum PM₁₀ levels (24-hour average) in rural portions of western Colorado to be near 50 micrograms per cubic meter (µg/m³). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM₁₀ (24-hour average) of 150 µg/m³.

Environmental Consequences of the Proposed Action: Exhaust produced from production facilities and heavy equipment associated with the proposed actions combined with the increasing number of fluid mining activities in the Piceance Creek Basin will have cumulative impacts detrimental to local air quality. However, following completion of the proposed actions,

air quality should return to near pre-construction levels in this location. During dry and windy periods, air quality may be compromised due to increased levels of fugitive particulate matter which is defined as fugitive emissions of particulate matter that are the direct or proximate result of man's activities (e.g. Materials left by man exposed to the wind or later acted upon by another force as the wind or automobile traffic, or particulate matter being thrown into the atmosphere by the operation of a heavy equipment). However, construction operations should not greatly compromise National Ambient Air Quality Standards (NAAQS) for particulate matter which calls for a maximum 24-hour average to be less than or equal to 150 µg/m³. In addition, following successful reclamation, particulate matter is also likely to return to pre-construction levels.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter, vehicle speeds must not exceed 15 mph or dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing the roadway with gravels will also help mitigate production of fugitive particulate matter.

To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Interim reclamation will consist of excess stockpiled soils associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilized on slopes exceeding 5% (e.g. fill slopes).

If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see vegetation section of this document). Furthermore, soils stockpiled for short durations (e.g. during road/pipeline construction/maintenance) will be wetted during dry periods to reduce production of fugitive particulate matter.

CULTURAL RESOURCES

Affected Environment: Proposed 298-31-6 well location, access road and well tie pipeline: The proposed well pad, access road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Conner and Davenport 2006, Compliance Date 6/15/2006) with one new resource identified in the proposed well pad area. The site does not appear to be National Register of Historic Places (NRHP) eligible though destruction of the site will constitute a minor loss to regional archaeological data base.

Proposed 298-27-7 well location, access road and well tie pipeline: The proposed well pad, road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Conner and Davenport 2006, Compliance Date 6/15/2006) with one new resources identified in the proposed well pad area. The site does not appear to be NRHP eligible though destruction of the site will constitute a minor loss to regional archaeological data base.

The proposed 298-26-9 well location, access road and well tie pipeline: The proposed well pad, new access road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Conner and Davenport 2006, Compliance Date 6/15/2006) with no new cultural resources identified in the inventoried area.

The proposed 298-26-8 well location, new access road and well tie pipeline: The proposed well pad, new access road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Conner and Davenport 2006, Compliance Date 6/15/2006) with no new cultural resources identified in the inventoried area.

The proposed 298-31-2 well location, access road and well tie pipeline: The proposed well location, access road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Conner 2005, Compliance Date 1/18/2006) with no new cultural resources identified in the proposed well pad and access road area.

The proposed 298-31-3 well location, access road and well tie pipeline: The proposed well location, access road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Conner 2005, Compliance Date 1/18/2006) with no new cultural resources identified in the proposed well pad and access road area.

The proposed 298-31-4 well location, access road, and well tie pipeline: The proposed well location, access road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Conner 2005, Compliance Date 1/18/2006) with no new cultural resources identified in the proposed well pad and access road area. One site is known to exist within 305 meters of the proposed well location

The proposed 298-31-5 well location, access road, and well tie pipeline: The proposed well location, access road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Conner 2005, Compliance Date 1/18/2006) with no new cultural resources identified in the proposed well pad and access road area. One site is known to exist within 305 meters of the proposed well location

Environmental Consequences of the Proposed Action: The proposed 298-31-6 well location, access road and well tie pipeline: if the proposed well is constructed as planned site 5RB 5214 will be totally destroyed resulting in a minor loss of regional archaeological data. The loss would be much more substantial if previously undetected subsurface features are present on the site.

The proposed 298-27-7 well location, access road and well tie pipeline: if the proposed well is constructed as planned site 5RB 5215 will be totally destroyed resulting in a minor loss of

regional archaeological data. The loss would be much more substantial if previously undetected subsurface features are present on the site.

The proposed 298-26-9 well location, 298-31-3 well location, 298-31-5 well location, 298-26-8 well location, 298-31-2 well location, tie pipeline, access road and well tie pipeline: The proposed well pad locations, access roads and well tie pipelines will not impact any known cultural resources. There are no known cultural resources within 305 meters of the proposed well location.

The proposed 298-31-4 well location, access road and well tie pipeline: No cultural resources were identified in the area inventoried for the well pad, access road and well tie pipeline however, a site is known to exist within 305 meters of the proposed well location. This site could potentially be impacted by vibrations or increased visitation due to the increase in roads and traffic in the area.

Environmental Consequences of the No Action Alternative:

Mitigation: If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

Proposed 298-31-6 well location, access road and well tie pipeline: A monitor shall be present during all initial ground clearing and leveling for the well pad location, particularly in the vicinity of site 5RB 5214. If any previously undetected buried features are identified all construction activity must stop immediately and the Authorized Officer shall be immediately notified.

The proposed 298-27-7 well location, access road and well tie pipeline: A monitor shall be present during all initial ground clearing and leveling of the well pad location, particularly in the vicinity of site 5RB 5215. If any previously undetected buried features are identified all construction activity must stop immediately and the Authorized Officer shall be immediately notified.

The proposed 298-31-4 well location, access road and well tie pipeline:

- Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains,

funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

- All construction, drilling and well pad operational personnel are restricted to the access road and well pad location at all times during the operational life of the well.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: There are no known noxious weeds in the area of the proposed project. The invasive alien cheatgrass is present throughout the area on unrevegetated areas of soil disturbance in association with roads, pipelines and well locations.

Environmental Consequences of the Proposed Action: The proposed action will create about 24 acres of new earthen disturbance, which if it is not revegetated with desirable species and /or treated with herbicides to eradicate noxious weeds/ cheatgrass, will be invaded and dominated by noxious weeds/cheatgrass, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project site to surrounding native rangelands resulting in a long term negative impact. The resulting proliferation of noxious weeds/cheatgrass will perpetuate a downward cycle of environmental degradation that will be largely irreversible. There will be a low likelihood of long term negative impact if the proposed mitigation is properly implemented

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

MIGRATORY BIRDS

Affected Environment: These wells involve big sagebrush communities undergoing varying degrees of encroachment by pinyon-juniper (i.e., 31-2, 31-3, 31-4, 31-6, and 26-8), open canopied pinyon-juniper stands (31-5, 26-9) or mature closed canopy pinyon-juniper (27-7). A number of migratory birds fulfill nesting functions in these habitats during the months of May, June, and July. Species associated with the shrublands (i.e., Brewer's sparrow, green-tailed towhee) are common and widely represented in the Resource Area and region. As pinyon-juniper begins to establish on these sites, the abundance of sagebrush obligates declines and more generalized woodland species (e.g., chipping sparrow) begin to appear. Those birds associated with the pinyon-juniper (i.e., gray flycatcher, pinyon jay, juniper titmouse, black-throated gray warbler, violet-green swallow) communities identified as having higher conservation interest by the Rocky Mountain Bird Observatory/Partners in Flight program are likewise abundant and well distributed in extensive suitable habitats throughout the Resource Area.

Environmental Consequences of the Proposed Action: There was no firm schedule provided for construction and drilling operations associated with these pads. In the event development activity extends into the May-July breeding season, levels of nest disturbance associated with these pads would be minor. The site conditions associated with many of these pads tend to reduce the utility of the sites for nesting and the probability of their sustaining strong nest densities. Two of the pads (4 acres) are sited within 300' of maintained county roads (i.e., nest density tending to decline within 300' of well-traveled roads); of these, each involves pinyon-juniper encroached sagebrush habitat (i.e., reduced abundance of sagebrush obligates). Two additional pads also involve pinyon-juniper encroached sagebrush (4 acres). The remaining sites (pads and roads) are comprised of open canopied pinyon-juniper (7 acres), Wyoming big sagebrush (2 acres), and mature pinyon-juniper (2 acres). In the event all wells were developed during the nesting season, it would be unlikely that nesting activity of more than 10 pair of higher interest birds would be adversely affected.

The development of reserve pits in the project area may be expected to attract waterfowl and other migratory birds for purposes of resting, foraging, or as a source of free water. In certain situations migratory waterfowl (i.e., teal and gadwall) have contacted drilling or frac fluids (i.e., stored in reserve pits) during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with produced water and drilling and completion fluids which may pose a problem (e.g., acute or chronic toxicity, compromised insulation).

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to disrupt the breeding activities of migratory birds. Alternate actions would have similar or more substantive consequences as those discussed under the proposed action.

Mitigation: The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

Environmental Consequences of the Proposed Action: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation: The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: Surface Water: The proposed actions are all situated in the Lower Piceance Creek 5th Level Watershed. Locations 298-31-2, 298-31-3, and 298-31-5 are all located in the Ryan Gulch catchment area. Locations 298-31-4 and 298-31-6 are situated along the drainage divide between Ryan Gulch and Black Sulphur Creek. Locations 298-26-8, 298-26-9, and 298-27-7 can be found in the Black Sulphur Creek drainage. The closest location to perennial surface water is 298-27-7 and it is situated on a narrow ridge, approximately 0.5 miles to the north of Black Sulphur Creek. The access route to locations 298-26-8 and 298-26-9 will cross Black Sulphur Creek on private surface. Several small ephemeral tributary drainages to Ryan Gulch and Black Sulphur Creek will be directly impacted by surface disturbing activities associated with the proposed actions on BLM surface.

Black Sulphur Creek (perennial) and Ryan Gulch (ephemeral) are both tributaries to Piceance Creek which is a tributary to the White River. The White River is a tributary to the Green River (tributary to the Colorado River). Black Sulphur Creek is situated in stream segment 20 of the White River Basin while the affected portion of Ryan Gulch can be found in stream segment 16 of the White River Basin. It must be stated that past oil and gas activities (well pad and access road) combined with poor grazing practices on private land in Black Sulphur Creek have aided in channel modifications (channel straitening) and deterioration of riparian communities resulting in disconnected floodplains, deep channel incision, and increased sediment loads. Based on measured cross sectional data, Black Sulphur Creek above Yankee Gulch (near Riata location 398-7-3) is a G4/5 Rosgen stream channel type. G4 stream channels are very unstable due to the very high sediment supply available from both upslope and channel derived sources. G5 channels are generally in the degradation mode derived from near continuous channel adjustments, due to excessive bank erosion. Bedload transport rates in G5 channels can exceed 50% total load; with active, extensive, consistent channel erosion more typical than not (Rosgen, 1996).

The “Status of Water Quality in Colorado –2006” (CDPHE 2006b) and Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a) were

reviewed for information relating to drainages within the project area. Stream segment 16 of the White River Basin is defined as all tributaries to Piceance Creek, including all wetlands, lakes and reservoirs, from the source to the confluence with the White River, except for the specific listings in segments 17, 19, and 20. The State has classified stream segment 16 of the White River Basin as “Use Protected” and further designated as beneficial for the following uses: Warm Aquatic Life 2, Recreation 2, and Agriculture. The antidegradation review requirements in the Antidegradation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. For this reach, minimum standards for three parameters have been listed. These parameters are: dissolved oxygen = 5.0 milligrams per liter (mg/l), pH = 6.5 - 9.0, and Fecal Coliform = 2,000/100 milliliters (ml) and 630/100 ml E. coli. Numeric standards for inorganic compounds and metals can be found within Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a).

Stream segment 20 of the White River Basin is defined as the mainstems of Black Sulphur and Hunter Creeks from their sources to their confluences with Piceance Creek. Segment 20 has not been designated use-protected. An intermediate level of water quality protection applies to waters that have not been designated outstanding waters or use-protected waters. For these waters, no degradation is allowed unless deemed appropriate following an antidegradation review. The state has classified segment 20 as being beneficial for the following uses: Cold aquatic life 1, Recreation 2, and Agriculture (CDPHE 2005a).

Newly promulgated Colorado Regulations Nos. 93 and 94 (CDPHE 2006c and 2006d, respectively) were reviewed for information related to the proposed project area drainages. Regulation No. 93 is the State’s Section 303(d) list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2006 303(d) list of segments needing development of TMDLs includes two segments within the White River - segment 9b, White River tributaries North and South Forks to Piceance Creek, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL development) and segment 22, tributaries to the White River, Douglas Creek to the Colorado/Utah boarder, specifically West Evacuation Wash, and Douglas Creek (sediment impairments). Regulation 94 is the State’s list of water bodies identified for monitoring and evaluation, to assess water quality and determine if a need for TMDLs exists. The list includes two White River segments that are potentially impaired – 9 (Flag Creek) and 22 (Soldier Creek). Stream segments 16 and 20 were not listed.

Ground Water: Surface geologic formation at all of the proposed locations is Tertiary in age (Uinta Formation) and consists primarily of interbedded sandstone and siltstone. A review of the US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed action. The proposed action is located in the Piceance Creek structural basin. Primary hydrogeologic units within the Piceance Basin are listed in the following table.

Summary of Hydrogeologic Units						
Hydrogeologic Unit	Stratigraphic Unit	Physical Description	Thickness (ft)	Hydraulic Conductivity (ft/day)	Yield (gpm)	TDS mg/L

Summary of Hydrogeologic Units						
Hydrogeologic Unit	Stratigraphic Unit	Physical Description	Thickness (ft)	Hydraulic Conductivity (ft/day)	Yield (gpm)	TDS mg/L
Upper Piceance Basin aquifer	Uinta Formation	sandstone, fractured siltstone, fractured marlstone	0 – 1,400	<0.2 to >1.6	1- 900	500-1,000
Mahogany confining unit	Green River Formation	dolomitic marlstone and shale	500-1,800	<0.01	<25	NL
Lower Piceance Basin aquifer	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000
Basal confining unit	Green River Formation, Wasatch Formation	claystone, siltstone, clay rich oil shale, marlstone, channel sandstone	0-6,800	<0.01	<10-100	NL
Fort Union aquifer	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
Mesaverde aquifer	Mesaverde Group	sandstone interbedded shale and coal	Averages 3,000	0.0001-1.0	NL	NL
Mancos confining unit	Mancos Shale	mostly shale but Frontier Sandstone may be local aquifer	>7,000	NL	NL	NL
Abbreviations: ft = feet, approx = approximate, avg = average, gpm = gallons per minute, mg = milligrams, L = liters, and NL = not listed.						

Table information from Topper et al. (2003).

The Piceance Creek drainage basins upper and lower aquifers are separated by the semi-confining Mahogany Zone. Information presented in Topper et al. (2003) indicates the following approximate depths to potentiometric surfaces (elevation at which water level would have stood in tightly cased wells, 1985/1986) within hydrogeologic units: Based on a surface elevation of 7,000 feet along Wagonroad Ridge; upper Piceance basin aquifer 600 feet, lower Piceance basin aquifer 500 feet, and Mesaverde aquifer 0 feet. Based on a surface elevation of 6,700 feet near location 398-7-3 along Black Sulphur Creek approximate potentiometric surfaces are as follows: upper Piceance basin aquifer 100 feet, lower Piceance basin aquifer 0 feet, and Mesaverde aquifer +500 feet (flowing artesian). Water well data from the Colorado Division of Water Resources (Topper et al., 2003) indicated that in central Rio Blanco County water wells are uncommon. Based on existing water well data near the project area, total concentration of dissolved constituents in the upper and lower aquifers is generally lower than 1000 milligrams per liter.

No springs or flowing water wells have been identified within a one mile radius of any of the proposed locations.

Environmental Consequences of the Proposed Action: Surface Water: New surface disturbing activities associated with the proposed actions will increased soil exposure to erosional processes. New surface disturbance will destroy existing vegetation and increase compaction. Increased compaction combined with reduced vegetation will further decrease

infiltration rates and elevate erosive potential due to runoff (overland flows) and raindrop impact during storm events. Sediment loads to Black Sulphur Creek will be further elevated as a result of surface disturbance at locations 298-27-7, 298-26-8, and 298-26-9.

In addition, given the moderately rapid permeability rates of the affected soils, leaks or spills of environmentally unfriendly substances are likely to be carried down gradient in local ground water. Contaminants being transported by local ground water may discharge into surface waters of Black Sulphur Creek and ephemeral tributaries during wet periods, be transported down gradient and potentially deteriorate surface water quality in Piceance Creek and the White River.

Ground Water: In the event of any leaks or spills, local ground water may be adversely impacted as runoff could carry contaminants down gradient to alluvial aquifers such as the Black Sulphur and Piceance Creek alluvium. Potential for ground water contamination increases if fractures in confining units are formed. Hydraulic conductivity increases exponentially along fracture zones resulting in rapid transport of fluids/contaminants in these areas. The upper and lower Piceance Basin aquifers have differing water qualities, mixing will degrade water quality in the upper aquifer which is generally of better quality. Storage or surface disposal methods (e.g. evaporation ponds) for produced water would also elevate potential for contaminating ground water of the Upper Piceance Basin Aquifer and Piceance Creek Alluvial Aquifer.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Section 404 permits, and Industrial Wastewater/Produced Water Permits). The operator will also be required to provide the BLM with documentation that all required permits were obtained and have a copy of the EPA approved Storm Water Management Plan on file at the WRFO-BLM.

All surface disturbing activities will strictly adhere to “Gold Book” fourth edition surface operating standards for oil and gas exploration and development (copies of the “Gold Book” fourth edition can be obtained at the WRFO).

Corrugated metal pipes (CMPs) are not recommended on slopes less than 10% and will NOT be used as drainage relief structures for stream crossings/gullies or to drain inside drain ditches on slopes less than 3%. Based on the nature of the affected soils, drain dips will be utilized in place of CMPs in these locations. Energy dissipaters such as large gravels/small cobbles will be used at culvert and drainage dip outlets to minimize additional erosion.

To mitigate water being channelized down roadways, all activity must stop when soils or road surfaces become saturated to a depth of three inches. Mud blading will be prohibited in attempts to reduce further soil displacement. Furthermore, following abandonment of the well pad all disturbed surfaces will be recontoured to the original grade promptly covered with a sufficient amount of woody debris (if available) and seeded with the appropriate seed mixture as outlined in the vegetation section of this document.

To mitigate surface erosion at well pads, interim reclamation will be required as outlined in the Wildlife, Aquatic and Air Quality mitigation sections above. Furthermore, silt fences will be utilized on all slopes exceeding 5 % to retain soil onsite.

Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Riata shall NOT use mechanical means of evaporation to dispose of produced water without prior BLM approval.

Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested at all locations to intercept such contaminants prior to contacting soils. Furthermore, to protect shallow ground water all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

At location 298-27-7, the configuration of the reserve pit will be modified (diamond shaped as discussed on the onsite) to allow an adequate buffer to an unnamed ephemeral drainage.

Finding on the Public Land Health Standard for water quality: Stream segments 16 and 20 of the White River Basin currently meet water quality standards set by the state. Many of the upper tributaries are ephemeral, flow only in direct response to storm events/snowmelt and do not meet the standards during periods of flow. By following all suggested mitigation measures, water quality in the affected stream segment should continue to meet standards.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: There are no wetlands or riparian zones potentially influenced by the proposed or no-action alternatives. The nearest persistent water is Black Sulfur Creek, which is separated from the nearest surface disturbance (27-7 location) by about 0.5 mile of ephemeral channel.

Environmental Consequences of the Proposed Action: The proposed action would have no influence on downstream channel systems.

Environmental Consequences of the No Action Alternative: The no-action alternative would have no influence on downstream channel systems.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): Because there are no wetlands or riparian zones potentially influenced by the proposed or no-action alternatives, a land health standard finding is not relevant. With the application of standard soils, hydrology, and reclamation BMPs the

proposed and no action alternatives would have no measurable influence on wetlands or riparian zones associated with downstream systems.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No ACEC's Wilderness, flood plains, prime and unique farmlands, or Wild and Scenic Rivers, threatened, endangered or sensitive plants or animals exist within the area affected by the proposed action. For threatened, endangered and sensitive species, the Public Land Health Standards are not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status species. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The following data is a product of an order III soil survey conducted by the Natural Resources Conservation Service (NRCS) in Rio Blanco County, CO. Table 1 highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office.

Table 1:

Soil Number	Soil Name	Slope	Ecological site	Salinity (mmhos/cm ²)	Run Off	Erosion Potential	Bedrock
33	Forelle loam	3-8%	Rolling Loam	<2	Medium	Moderate	>60
40	Hagga loam	0-5%	Swale Meadow	2-8	Slow	Slight	>60
64	Piceance fine sandy loam	5-15%	Rolling Loam	<2	Medium	Moderate to high	20-40
70	Redcreek-Rentsac complex	5-30%	PJ woodlands/PJ woodlands	<2	Very high	Moderate to high	10-20
73	Rentsac channery loam	5-50%	Pinyon-Juniper woodlands	<2	Rapid	Moderate to very high	10-20

Control Surface Use (CSU-1) "fragile soils" are mapped at locations 298-27-7 and 298-26-9 including associated access roads. However, following an onsite evaluation (1/12/06) and observation of a topographic map, it was concluded that no surface disturbing activities will occur on slopes greater than 35 percent. Thus, controlled surface use stipulations will not apply.

33-Forelle loam (3 to 8 percent slopes) is a deep, well drained soil located on terraces and uplands. It formed in eolian and alluvial material derived dominantly from sedimentary rock. The native vegetation is mainly low shrubs and grasses. Elevation is 5,800 to 7,200 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is pale brown loam 4 inches thick. The upper 12 inches of the subsoil is yellowish brown clay loam, and the lower 5 inches is light yellowish brown loam. The substratum to a depth of 60 inches or more is very pale brown loam. Permeability of this Forelle soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

40-Hagga loam (0 to 5 percent slopes) is a deep, poorly drained soil found on flood plains and alluvial valley floors. It formed in alluvium derived dominantly from sandstone and shale. The native vegetation is mainly water-tolerant grasses. Elevation is 5,800 to 7,200 feet. The average annual precipitation is 15 to 16 inches, the average annual air temperature is 43 to 45 degrees F, and the average frost-free period is 85 to 105 days. Typically, the surface layer is light brownish gray loam 5 inches thick. Below this to a depth of 60 inches or more is stratified silty clay loam to loamy fine sand. The color is variable because of wetness and stratification. Permeability of this Hagga soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more for water-tolerant plants, but it is limited to depths between 10 and 20 inches for non-water-tolerant plants. Runoff is slow, and the hazard water erosion is slight. A seasonal high water table is at a depth of 12 to 24 inches in spring and early in summer. This soil is subject to brief periods of flooding in spring and summer.

64-Piceance fine sandy loam (5 to 15 percent slopes) is a moderately deep, well drained soil found on uplands and broad ridgetops. It formed in eolian material and colluvium derived dominantly from sandstone. The native vegetation is mainly low shrubs, grasses, and a few pinyon trees. Elevation is 6,300 to 7,500 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is brown fine sandy loam 4 inches thick. The upper 5 inches of the subsoil is brown loam, and the lower 13 inches is light yellowish brown loam. The substratum is very pale brown channery loam 8 inches thick. Hard sandstone is at a depth of 30 inches. Depth to sandstone ranges from 20 to 40 inches. Permeability of this Piceance soil is moderate. Available water capacity is moderately low. Effective rooting depth is 20 to 40 inches. Runoff is slow to medium, and the hazard of water erosion is moderate to high.

70-Redcreek-Rentsac complex (5 to 30 percent slopes) is located on mountainsides and ridges. Areas are elongated and are 40 to 300 acres. The native vegetation is mainly pinyon and juniper trees with an understory of shrubs and grasses. Elevation is 6,000 to 7,400 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 85 to 105 days. This unit is 60 percent Redcreek sandy loam and 30 percent Rentsac channery loam.

The Redcreek soil is shallow and well drained. It formed in residual and eolian material derived dominantly from sandstone. Typically, the surface layer is brown sandy loam about 4 inches thick. The next layer is brown, calcareous sandy loam about 7 inches thick. The underlying material is very pale brown, calcareous channery loam 5 inches thick. Hard sandstone is at a depth of 16 inches. Depth to hard sandstone or hard shale ranges from 10 to 20 inches. Permeability of the Redcreek soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to high.

The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, the upper part of the surface layer is grayish brown channery loam about 5 inches thick. The next layer is brown very channery loam about 4 inches thick. The underlying material is very pale brown extremely flaggy loam 7 inches thick. Hard sandstone is at a depth of 16 inches. Depth to hard sandstone or hard shale ranges from 10 to 20 inches. Permeability of the Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to high.

73-Rentsac channery loam (5 to 50 percent slopes) is a shallow, well drained soil located on ridges, foothills, and side slopes. It formed in residuum derived dominantly from calcareous sandstone. The native vegetation is mainly pinyon, juniper, brush, and grasses. Elevation is 6,000 to 7,600 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is grayish brown channery loam about 5 inches thick. The next layer is very channery loam about 4 inches thick. The underlying material is extremely flaggy light loam 7 inches thick. Hard sandstone is at a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. Permeability of this Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to very high.

Environmental Consequences of the Proposed Action: The well pads and associated access roads are situated on soils which have been identified as having slight to very high erosive potential. Improper drainage from the project areas will increase potential for overland flows accelerating erosion rates leading to soil piping, head cutting and gully formation. Removal of limited ground cover will also expose soils to erosional processes. Heavy traffic will increase soil compaction decreasing infiltration rates which in turn will also increase potential for erosive overland flows.

Grading, trenching, and backfilling associated with construction/reclamation activities could result in mixing of soil horizons and may result in reduced soil fertility and revegetation potential. In addition, surface disturbing activities may give noxious weeds the opportunity to establish as equipment could transport seed to/from the project areas.

Leaks or spills of environmentally unfriendly substances on or near the pad may contaminate soils hindering revegetation efforts. Soils unable to support a healthy plant community will be less cohesive (due to lack of root structure) and more vulnerable to erosional processes.

Environmental Consequences of the No Action Alternative: None

Mitigation: Comply with “Gold Book” surface operating standards for constructing well pad, pipeline and access road (copies of the “Gold Book” can be obtained at the WRFO). Interim reclamation will be required as addressed in the Air and Water Quality sections of this EA. Complete reclamation will follow abandonment of the well pads. Access roads and well pads will be recontoured and 100% of disturbed surfaces will be vegetated with the suggested seed mixture outlined in the Vegetation section of this EA.

To mitigate contamination of soils and local groundwater, environmental unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of impermeable matting under equipment (tanks, pumps, or other equipment used in handling hazardous liquids) is suggested to intercept and contain potential releases.

Segregation of topsoil material and replacement of topsoil in its respective original position (last out, first in) would assist in the reestablishment of soil health and productivity. Topsoil stockpiles should be seeded and covered with geotextiles fabric to minimize erosion and maintain viability of the topsoil resource.

All disturbed surfaces associated with the proposed actions must be monitored and treated for noxious and invasive plant species. Treatment and monitoring for noxious and invasive plant species will persist until the BLM sees fit.

Finding on the Public Land Health Standard for upland soils: Currently, soils in the vicinity of the proposed action exhibit infiltration and permeability rates appropriate for soil type, landform, climate, and geologic processes. The proposed actions will cause decreases in both infiltration and permeability rates due to soil compaction and loss of vegetal cover. However, with proper mitigation soils health standards should continue to be met.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The locations, access roads and pipelines in Sec 26 and 27, T 2S R98W are located in pinyon –juniper woodland. The locations, access roads and pipeline routes in Sec 31 are on uplands which are best characterized as mixed pinyon/Wyoming big sagebrush with a perennial grass/forb understory. The principal ecological site associated with this vegetation type is Rolling Loam.

Environmental Consequences of the Proposed Action: The proposed action will create about (24) twenty four acres of new earthen disturbance. The principal impact to vegetation will be complete removal of vegetation on the well sites, access roads and pipelines, and the earthen disturbance associated with it. In terms of plant community composition, structure and function, the principal negative impact over the long term would occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas resulting from pad, pipeline, and access road construction. The current road management practices, including unnecessary

blading, plowing of extraneous cutouts etc. and other such disturbance is encouraging the proliferation of cheatgrass throughout the area.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: Promptly recontour and revegetate all disturbed areas using Native Seed Mix #2, substituting needle and thread for green needlegrass in this seed mixture. Revegetation shall include all cut and fill slopes associated with access road and pad construction. Eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

Native Seed Mix #2		
Western wheatgrass (Rosanna,)	2	Deep Loam, Loamy 10"-14", Loamy Breaks, Loamy Slopes, Rolling Loam, Valley Bench
Indian ricegrass (Rimrock)	1	
Bluebunch wheatgrass (Whitmar)	2	
Thickspike wheatgrass (Critana)	1	
Needle and thread	1	
Globemallow	0.5	

Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application. If seed is broadcast, then the PLS seeding rate will be doubled.

If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads with material that will significantly reduce airborne dust and damage to roadside vegetation communities.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): Upland plant communities in the project area currently meet the Standard and are expected to continue to meet the Standard following implementation of the project.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: The nearest system supporting aquatic communities are private reaches of Black Sulphur Creek, a perennial stream that is heavily influenced by long duration spring and summer grazing and irrigation drawdown. This channel is separated from the nearest project-related disturbance by about 0.5 mile of ephemeral channel. These actions are even more distantly removed from the nearest BLM-administered lands (i.e., over 20 miles in the case of Piceance Creek via Black Sulphur).

Environmental Consequences of the Proposed Action: Because of substantial downstream separation via ephemeral channels, and as conditioned by State and federal

mitigation requirements, there is no reasonable probability of aquatic habitats being potentially influenced by these proposed developments.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to influence downstream aquatic habitats. Alternate locations would likely have impacts similar to those associated with the proposed action.

Mitigation: None.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): The proposed and no-action alternatives would have no conceivable influence on the condition or function of downstream aquatic habitats (privately owned). Because there are no wetlands or riparian zones potentially influenced by the proposed or no-action alternatives, a land health standard finding is not relevant. With the application of standard soils, hydrology, and reclamation BMPs, the proposed and no action alternatives would have no measurable influence on wetlands or riparian zones associated with downstream systems. These actions are even more distantly removed from the nearest BLM-administered lands (i.e., an additional 4 miles in Yellow Creek and over 20 miles in the case of Piceance Creek via Black Sulphur) and they would have no potential to influence the status of land health standards as applied to those stream reaches.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The proposed wells are encompassed by higher elevation winter ranges of deer and within the general winter distribution of elk. These ranges are most consistently occupied by the largest number of animals from October through January and again in April and early May. Two of the locations, 31-4 and 31-6, are immediately adjacent to a major maintained access road (RBC 144). The 27-7 is accessed by an existing series of seldom used 2-tracks; the remaining 5 wells require new access that extends development up to 500 meters from existing forms of disturbance (access to the 26-8 and 26-9 originates from private land).

Non-game wildlife using this area are typical and widely distributed in extensive like habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action. Mature stands of pinyon and juniper found within the project area may provide suitable nesting habitat for certain species of raptors (e.g., sharp-shinned hawk, Cooper's hawk, and red-tailed hawk). Surveys of suitable woodland habitats were conducted by BLM wildlife biologists in October 2005 and February 2006. No recent or historic evidence of raptor nesting activity was found.

Environmental Consequences of the Proposed Action: Newly constructed access and upgrades of primitive roads required for development of 6 of these wells (about 2.5 miles) represent substantial encroachment onto big game winter ranges and adds incrementally to road density-related impacts (i.e., relating to habitat disuse adjacent to disturbance and elevated

energetic demands associated with harassment). The area associated with the 26-8 and 26-9 locations is accessed through private lands, which would likely serve to limit the frequency of vehicle use (outside active well development) in the long term. The remaining well access would result in increased frequency and duration of vehicle-related disturbance on these big game winter ranges, as shorter-term well development and longer-term public access. The capacity of these ranges to sustain former levels of big game use would be incrementally reduced in the long term. An existing network of 2-tracks generally limits effective options to control use levels on these well access roads.

Longer term occupation of these lands and the reduction in the herbaceous and woody forage base for big game (about 12 acres) would be minor. Herbaceous forage availability would be largely regained on about a third of this acreage in the short term with standard reclamation practices and integration of interim reclamation. Similarly, the loss of forage and cover for non-game animals would be negligible at the landscape scale.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would impose behavioral or habitat capacity constraints on resident wildlife populations.

Mitigation: The use of interim reclamation techniques will be used to the extent practicable such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., use of production pad or on-pad at point where access road enters pad), and 3) disturbed areas are recontoured, revegetated, and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

General public access to the 31-5, 31-2, and 31-3 locations should be restricted by means of a lockable gate placed along the access to the 31-5 location at a point as close as possible, but west of the two-track that parallels RBC 144 (about 250 feet to the west). The selected point would be subject to the approval of the authorized officer with the objective of effectively deterring unauthorized bypass (e.g., may require fence wings). This gate should be emplaced by the time initial well completion activities are complete and should remain locked at all times (except during well workover or high-traffic maintenance activities).

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): Although the project area is being subjected to increasing levels of natural gas development, the project area meets the land health standards on a landscape scale. The proposed action is expected to incrementally reduce local habitat capacity over the life of the well field; more prolonged influences associated with road density would be dependent on subsequent land use decisions by the BLM. As conditioned by reclamation-related provisions, implementation of the proposed action would not interfere with continued landscape level maintenance of the land health standards.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management			
Forest Management			
Geology and Minerals			X
Hydrology/Water Rights		X	
Law Enforcement		X	
Noise			
Paleontology			X
Rangeland Management			X
Realty Authorizations			X
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

ACCESS AND TRANSPORTATION

Affected Environment: Rio Blanco County Roads 68, 86 and 85 are adjacent to proposed locations.

Environmental Consequences of the Proposed Action: An increase of traffic would be expected to occur while these pads are being constructed. Traffic to the pads will be less frequent following pad completion. Pads provide no additional public access to public lands.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

FIRE MANAGEMENT

Affected Environment: The actions proposed occur within the D5 Cathedral/Roan Plateau and in the C6 Lower Piceance Basin fire management polygons. The D polygon is an area that has minimal constraints on the use of wildfires to achieve public land health objectives while the C polygon has political and ecological constraints which must be considered prior to implementing a wildland fire use decision.

The proposed 298-31-5 and 298-27-7 wells fall within the C6 polygon and the 298-34-4, 298-31-6, 298-26-9, and 298-26-8 are planned within the D5 polygon. The proposed well pads involves approximately 2.8 miles of road/pipeline construction and/or road improvement and about 8.4 acres of drill pad clearing for an approximate total of 18.7 acres of disturbance in the pinyon/juniper fuel type.

The National Fire Plan calls for “firefighter and public safety” to be the highest priority for all fire management activities. In the pinion, juniper, and brush types common on the White River Resource Area, roads and other man-made openings are commonly used as fuel breaks or barriers to control the spread of both wildland and prescribed fires. By reducing the activity fuels created from this proposal, future fire management efforts in this area should be safer for those involved and more effective.

Environmental Consequences of the Proposed Action: Constructing the roads, pipelines and well pads will not change the management of fire in the C6 or D5 polygons. The proposed action will require the removal of a substantial amount of vegetation (approximately 10-20 tons/acre). Due to the existing tree cover of pinion and juniper, there will be a need for the operator to clear some of these trees. If not adequately treated, these trees will result in elevated hazardous fuels conditions and remain on-site for many years. These accumulations of dead material are very receptive to fire brands and spotting from wind driven fires and can greatly accelerate the rate of spread of the fire front. The roads associated with this project may be used by the general public for a variety of uses, including access for fire wood gathering, hunting and other dispersed recreational activities. Increased public use of an area will nearly always result in an increased potential for man-caused wildland fires. If not treated the slash and woody debris will create an elevated hazardous dead fuel loading which could pose significant control problems in the event of a wildfire/ wildland fire use event. Additionally there would be greater threat to the public, Riata personnel, and fire management personnel.

Development of the oil and gas facilities with appropriate mitigation would not be expected to affect BLM’s ability to use naturally occurring wildfires to achieve public land health objectives for the plant communities in the general area.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator has two options for treatment of slash from this project. A hydro-ax or other mulching type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size. The mulch is evenly scattered across the surface and effectively breaks down the woody fuel thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

FOREST MANAGEMENT

Affected Environment: The wells shown on the chart below are located within pinyon/juniper woodlands. These woodlands are broken out by age classes of mature, sub-mature and encroachment. The mature stands contain old growth characteristics. The sub-mature stands do not contain old growth characteristics and are general younger than 200 years. P-J encroachment contains tree seedling and saplings which are invading a sagebrush site. The mature and sub-mature woodlands are valuable locally as a source of firewood and posts for fence construction. Encroachment sites are valuable for Christmas tree harvest.

Well Number	Woodland Age Class	Well Pad acres in Woodlands	Pipeline & Access Rd. In Woodlands (Ac)	Woodland Acres Disturbed (Total)
298-31-6	PJ Encroachment	1.37 ac	.22 ac	1.59
298-27-7	Mature	1.55 ac	2.16 ac	3.71
298-26-8	Sub-Mature	1.37 ac	.43 ac	1.8
298-31-2	PJ Encroachment	1.37 ac	.95 ac	2.32
298-31-3	PJ Encroachment	1.37 ac	.36 ac	1.73
298-31-4	Sub-Mature	.9 ac	0	.9
298-31-5	Sub-Mature	.68 ac	0	.68
Total Woodland Acres				12.73

Environmental Consequences of the Proposed Action: The proposed project would remove approximately 12.73 acres of pinyon/juniper woodland. The permit holder is required to purchase this woodland material and dispose of it as described in mitigation. Following reclamation these woodlands would be colonized by pinyon and junipers within 30 years and would develop old growth characteristics between 150 and 300 years.

Environmental Consequences of the No Action Alternative: There would be no impacts.

Mitigation: From the White River ROD/RMP of 1997, Appendix B, 7; all trees removed in the process of construction shall be purchased from the Bureau of Land Management. The trees shall be cut with a maximum stump height of six inches and disposed of by one of the following methods:

Roads and Pads

- Trees must be cut before being dozed off the area of disturbance. Trees shall be cut into four-foot lengths, down to four inches in diameter and placed along the edge of the disturbance.
- Purchased trees may be removed from federal land for resale or private use. Limbs may be scattered off the area of disturbance but not dozed off.
- Chipped and scattered.

Pipelines: Trees will be dozed off the pipeline and windrowed. Following seeding the trees will be distributed throughout the disturbed area

GEOLOGY

Affected Environment: The surface geologic formation of the all the well locations is the Uinta formation and Riata's targeted zone is in the lower Mesaverde. During drilling potential water, oil shale, sodium, and gas zones will be encountered from surface to the targeted zone. All of the proposed wells are located in the area identified in the ROD/RMP as available for oil shale and sodium leasing and development. Fresh water aquifers that will be encountered during drilling are; the Perched in the Uinta, the A-groove, B-groove and the Dissolution Surface in the Green River formation. These geologic zones along with upper portion of the Wasatch are known for difficulties in drilling and cementing. Well locations 298-26-8, 298-26-9, and 298-27-7 are located near or on mapped faults which may adversely affect down hole drilling operations. The proposed wells will develop the natural gas resources on Federal oil and gas leases COC-068811, COC-068810, and COC-000400.

Environmental Consequences of the Proposed Action: Drilling and completion of these wells may adversely affect the aquifers if there is loss of circulation or problems cementing the casing. However, the submitted cementing and completion procedure of the proposed action isolates the formations and will prevent the migration of gas, water, and oil between formations. Development of these wells will deplete the hydrocarbon resources in the targeted formation. Well locations may prevent an orderly future development of sodium and oil shale resources.

Environmental Consequences of the No Action Alternative: The natural gas resources in the targeted zones will not be developed at this time.

Mitigation: None

PALEONTOLOGY

Affected Environment: The proposed 298-31-6, 298-27-7, 298-26-9, 298-26-8, 298-31-2, 298-31-3, 298-31-4, 298-31-5 well locations access roads and well tie pipelines: The proposed well locations, access roads and well tie pipelines are located in an area generally mapped as the Uinta Formation (Tweto 1979) which the BLM, WRFO has classified as a Condition I formation meaning it is known to produce scientifically important fossil resources.

Environmental Consequences of the Proposed Action: The proposed 298-31-6, 298-27-7, 298-26-9, 298-26-8, 298-31-2, 298-31-3, 298-31-4, 298-31-5, well locations, access roads and well tie pipelines: If it should become necessary at any time to excavate into the underlying rock formation to construct the road, level the well pad, excavate the reserve/blooiie pit or bury the well tie pipeline there is a potential to adversely impact scientifically important fossil resources.

Environmental Consequences of the No Action Alternative: There would be no new impacts to fossil resources under the No Action Alternative.

Mitigation: The proposed 298-31-6, 298-27-7, 298-26-9, 298-26-8, 298-31-2, 298-31-3, 298-31-4, 298-31-5 well locations, access roads and well tie pipelines: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

All exposed outcrops of the Uinta formation shall be examined by an approved paleontologist with the results of the examination and any recommended mitigation submitted to the BLM prior to the initiation of any construction.

If it becomes necessary, at any time, to excavate into the underlying rock in order to construct the access roads, level the well pads, excavate the reserve/blooiie pits or bury the well tie pipelines a paleontological monitor shall be present before and during all such excavations.

RANGELAND MANAGEMENT

Affected Environment: The five locations in Section 21 are within the Square S allotment (06027) which is permitted to Mantle Ranch and Boone Vaughn. Both permit holders run cattle on the allotment from May through January. The Swizer pasture where the proposed locations are is used as a spring –fall transition pasture for about two weeks typically from 6/15- 7/1 and 10/10- 10/25 on a yearly basis. The locations in Sec 26 and 27 are within the Black Sulphur allotment (06029). Livestock grazing on this allotment is permitted to Boone Vaughn and Mantle Ranch for spring and late fall/winter grazing use .

Environmental Consequences of the Proposed Action: There will be a loss of 2 AUMs on the Square S allotment and 2 AUMs on the Black Sulphur allotment . This proposed action could interfere with proper functioning of the range improvements near the proposal. The fences and water sources in this area are necessary for control of cattle to achieve grazing objectives on three grazing allotments and to keep cattle from straying into the wrong grazing use area. Damage to fences or gates left open interfere with control of cattle and ultimately with proper utilization of the rangeland resource. Damage to watering facilities could affect water availability and distribution of livestock, resulting in increased grazing pressure on

areas that have water available for livestock. Failure to control dust on access roads, pipeline and locations will render unusable an unquantified amount of forage adjacent to the proposed roads, locations and pipelines.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: The access road to the location in SWNW Sec 27 will require a cattle guard where it crosses the Square S/ Black Sulphur allotment boundary fence in the W1/2 SE1/4 Sec 21. In addition, all fences crossed by an access road to a well location, pipeline and/or gas plant will have a cattle guard installed and maintained to BLM specifications for the lifetime of the project. All cattle guard/fence work will take place prior to well location, pipeline or facility construction.

All roadside and well location cut and fill slopes will be revegetated immediately after construction with the seed mixture(s) specified in the conditions of approval. Such revegetation will be either temporary or permanent.

Any and all fences intersected by an access road or pipeline will be braced to BLM specifications prior to cutting. A temporary wire gate will be constructed. This work will take place prior to access road/ pipeline ROW construction.

REALTY AUTHORIZATIONS

Affected Environment: The 298-31-2, 298-31-3, 298-31-4, 298-31-5 and 298-31-6 wells and their associated pipelines and roads are located in Lease COC68811. Access will be from County Road 144 and the flow lines will connect to Sagebrush's gathering line system. Wells 298-26-8, and 298-26-9 and the proposed access road and pipeline and condensate lines are located in Lease COC00400. The pipeline(s) and road will exit BLM and continue on private lands. Well 298-27-7 and its associated pipeline and road are located in Lease COC 68810. The pipeline, buried or surface will exit the lease and connect to a line off-lease. The access will be from County Road 85.

Environmental Consequences of the Proposed Action: All the access roads and pipelines will be located on-lease or on private lands with the exception of the 298-27-7. A ROW will be required for the off lease portions of the access road from County Road 85 to the lease line and for the pipeline from the lease line to the destination pipeline. The pipeline be authorized by amendment to Riata's connecting pipeline grant COC68985 for a line of 2575 feet, 35 feet wide, and impacting approximately 2.07 acres. The road access will be authorized as an amendment to Riata's existing road ROW grant COC61014, for a length of 6100 feet, width of 35 feet, and impacting approximately 4.9 acres. Both will overlap each other and existing ROWs.

Environmental Consequences of the No Action Alternative: If the project is not approved, no roads or pipelines would be constructed and there would be no impacts.

Mitigation: Colorado One Call will be initiated before any excavation begins.

Construction for the pipelines should not begin until the associated wells are drilled or until authorization is given by the White River Field Office.

RECREATION

Affected Environment: The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The project areas have been delineated a Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). SPM recreation setting is typically characterized by a natural appearing environment with few administrative controls, low interaction between users but evidence of other users may be present. SPM recreation experience is characterized by a high probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

Environmental Consequences of the Proposed Action: The public will directly lose approximately 22.76 acres of dispersed recreation potential while wells are in operation. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

With the introduction of new well pads and roads, an increase of traffic could be expected increasing the likelihood of human interactions, the sights and sounds associated with the human environment and a less naturally appearing environment.

Environmental Consequences of the No Action Alternative: No loss of dispersed recreation potential and no impact to hunting recreationists.

Mitigation: None.

VISUAL RESOURCES

Affected Environment: The proposed actions are located in an area with a VRM III classification. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Environmental Consequences of the Proposed Action: The proposed actions are located in areas that are not visible by a casual observer traveling on RBC 24, which is the nearest route that would be traveled. By painting all facilities Juniper Green to blend with and mimic the surrounding vegetation types as stated in the APD, the level of change to the characteristic landscape would be low and the objectives of the VRM III classification would be retained.

Environmental Consequences of the No Action Alternative: There would be no environmental impacts.

Mitigation: None

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts from oil and gas development were analyzed in the White River Resource Area Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS) completed in June 1996. Current development, including the proposed action, has not exceeded the cumulative impacts from the foreseeable development analyzed in the PRMP/FEIS.

PERSONS / AGENCIES CONSULTED: None

REFERENCES CITES:

- Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD), 2005. "Colorado Air Quality Data Report – 2004," September 2005.
- Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC), 2005a. Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin. Amended December 12, 2005 and Effective March 2, 2006.
- CDPHE-WQCC, 2006b. "Status of Water Quality in Colorado – 2006, The Update to the 2002 and 2004 305(b) Report," April 2006.
- CDPHE-WQCC, 2006c. "Regulation No. 93, 2006 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs," effective April 30.
- CDPHE-WQCC, 2006d. "Regulation No. 94, Colorado's Monitoring and Evaluation List," effective April 30.
- Conner, Carl E.
2006 Class III Cultural Resources Inventory for Eight Proposed Well Locations (Fed 298-31-2, Fed. 298-3-3, Fed. 298-31-4, Fed. 298-31-5, Fed. 398-6-3, Fed. 398-6-4, Fed. 398-7-4, Fed. 398-7-5) in the Wagonroad Ridge and Swizer Gulch Areas of Rio Blanco County, Colorado for Riata Energy, Inc. Grand River Institute, Grand Junction, Colorado.
- Conner, Carl E. and Barbara Davenport
2006 Class III Cultural Resources Inventory of Four Proposed Well Locations (198-26-8, 298-26-9, 298-27-7, 298-31-6) and Their Related Access Routes in Rio Blanco

County, Colorado, for Riata Energy, Inc. Grand River Institute, Grand Junction, Colorado.

Rosgen, Dave. 1996. Applied River Morphology. Wildland Hydrology, Pagosa Springs, Colorado: 5-178, 5-182 pp.

Topper, R., K.L. Spray, W.H. Bellis, J.L. Hamilton, and P.E. Barkmann. 2003. Groundwater Atlas of Colorado, Special Publication 53. Prepared for State of Colorado Department of Natural Resources, Division of Minerals and Geology. Colorado Geological Survey. Denver, Colorado.

Tweto, Ogden

1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia.

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern, Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Mark Hafkenschiel	Rangeland Management Specialist	Invasive, Non-Native Species, Vegetation, Rangeland Management
Ed Hollowed	Wildlife Biologist	Migratory Birds
Ed Hollowed	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species
Melissa J. Kindall	Hazmat Collateral; Range Technician	Wastes, Hazardous or Solid; Wild Horses
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Ed Hollowed	Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Ed Hollowed	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Bob Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Linda Jones	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Keith Whitaker	Natural Resource Specialist	Visual Resources

Finding of No Significant Impact/Decision Record (FONSI/DR)

CO-110-2006-111-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION/RATIONALE: It is my decision to approve development of the wells and associated pipelines as described in the proposed action, with the addition of the mitigation measures listed below. This development, with mitigation, is consistent with the decisions in the White River ROD/RMP, and environmental impacts will be minimal.

MITIGATION MEASURES:

1. The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing the roadway with gravels will also help mitigate production of fugitive particulate matter.
2. To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Interim reclamation will consist of excess stockpiled soils associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilize on slopes exceeding 5% (e.g. fill slopes).
3. If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see vegetation section of this document). Furthermore, soils stockpiled for short durations (e.g. during road/pipeline construction/maintenance) will be wetted during dry periods to reduce production of fugitive particulate matter.

4. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

5. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

6. Proposed 298-31-6 well location, access road and well tie pipeline: A monitor shall be present during all initial ground clearing and leveling for the well pad location, particularly in the vicinity of site 5RB 5214. If any previously undetected buried features are identified all construction activity must stop immediately and the Authorized Officer shall be immediately notified.

7. The proposed 298-27-7 well location, access road and well tie pipeline: A monitor shall be present during all initial ground clearing and leveling of the well pad location, particularly in the vicinity of site 5RB 5215. If any previously undetected buried features are identified all construction activity must stop immediately and the Authorized Officer shall be immediately notified.

8. The proposed 298-31-4 well location, access road and well tie pipeline:

- Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.
- All construction, drilling and well pad operational personnel are restricted to the access road and well pad location at all times during the operational life of the well.

9. The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

10. The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion

activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

11. The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

12. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Section 404 permits, and Industrial Wastewater/Produced Water Permits). The operator will also be required to provide the BLM with documentation that all required permits were obtained and have a copy of the EPA approved Storm Water Management Plan on file at the WRFO-BLM.

13. All surface disturbing activities will strictly adhere to “Gold Book” fourth edition surface operating standards for oil and gas exploration and development (copies of the “Gold Book” fourth edition can be obtained at the WRFO).

14. Corrugated metal pipes (CMPs) are not recommended on slopes less than 10% and will NOT be used as drainage relief structures for stream crossings/gullies or to drain inside drain ditches on slopes less than 3%. Based on the nature of the affected soils, drain dips will be utilized in place of CMPs in these locations. Energy dissipaters such as large gravels/small cobbles will be used at culvert and drainage dip outlets to minimize additional erosion.

15. To mitigate water being channelized down roadways, all activity must stop when soils or road surfaces become saturated to a depth of three inches. Mud blading will be prohibited in attempts to reduce further soil displacement. Furthermore, following abandonment of the well pad all disturbed surfaces will be recontoured to the original grade promptly covered with a sufficient amount of woody debris (if available) and seeded with the appropriate seed mixture as outlined in the vegetation section of this document.

16. To mitigate surface erosion at well pads, interim reclamation will be required as outlined in the Wildlife, Aquatic and Air Quality mitigation sections above. Furthermore, silt fences will be utilized on all slopes exceeding 5 % to retain soil onsite.

17. Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Riata shall NOT use mechanical means of evaporation to dispose of produced water without prior BLM approval.

18. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested at all locations to intercept such contaminants prior to contacting soils. Furthermore, to protect shallow ground water all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

At location 298-27-7, the configuration of the reserve pit will be modified (diamond shaped as discussed on the onsite) to allow an adequate buffer to an unnamed ephemeral drainage.

19. Comply with “Gold Book” surface operating standards for constructing well pad, pipeline and access road (copies of the “Gold Book” can be obtained at the WRFO). Interim reclamation will be required as addressed in the Air and Water Quality sections of this EA. Complete reclamation will follow abandonment of the well pads. Access roads and well pads will be recontoured and 100% of disturbed surfaces will be vegetated with the suggested seed mixture outlined in the Vegetation section of this EA.

20. To mitigate contamination of soils and local groundwater, environmental unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of impermeable matting under equipment (tanks, pumps, or other equipment used in handling hazardous liquids) is suggested to intercept and contain potential releases.

21. Segregation of topsoil material and replacement of topsoil in its respective original position (last out, first in) would assist in the reestablishment of soil health and productivity. Topsoil stockpiles should be seeded and covered with geotextiles fabric to minimize erosion and maintain viability of the topsoil resource.

22. All disturbed surfaces associated with the proposed actions must be monitored and treated for noxious and invasive plant species. Treatment and monitoring for noxious and invasive plant species will persist until the BLM sees fit.

23. Promptly recontour and revegetate all disturbed areas using Native Seed Mix #2, substituting needle and thread for green needlegrass in this seed mixture. Revegetation shall include all cut and fill slopes associated with access road and pad construction. Eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

Native Seed Mix #2		
Western wheatgrass (Rosanna,)	2	Deep Loam, Loamy 10"-14", Loamy Breaks, Loamy Slopes, Rolling Loam, Valley Bench
Indian ricegrass (Rimrock)	1	
Bluebunch wheatgrass (Whitmar)	2	
Thickspike wheatgrass (Critana)	1	
Needle and thread	1	
Globemallow	0.5	

24. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application. If seed is broadcast, then the PLS seeding rate will be doubled.

25. If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads with material that will significantly reduce airborne dust and damage to roadside vegetation communities.

26. The use of interim reclamation techniques will be used to the extent practicable such that:

- All available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation),
- Production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., use of production pad or on-pad at point where access road enters pad), and 3) disturbed areas are recontoured, revegetated, and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

27. General public access to the 31-5, 31-2, and 31-3 locations should be restricted by means of a lockable gate placed along the access to the 31-5 location at a point as close as possible, but west of the two-track that parallels RBC 144 (about 250 feet to the west). The selected point would be subject to the approval of the authorized officer with the objective of effectively deterring unauthorized bypass (e.g., may require fence wings). This gate should be emplaced by the time initial well completion activities are complete and should remain locked at all times (except during well workover or high-traffic maintenance activities).

28. The operator has two options for treatment of slash from this project. A hydro-ax or other mulching type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size. The mulch is evenly scattered across the surface and effectively breaks down the woody fuel thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

29. From the White River ROD/RMP of 1997, Appendix B, 7; all trees removed in the process of construction shall be purchased from the Bureau of Land Management. The trees shall be cut with a maximum stump height of six inches and disposed of by one of the following methods:

Roads and Pads

- Trees must be cut before being dozed off the area of disturbance. Trees shall be cut into four-foot lengths, down to four inches in diameter and placed along the edge of the disturbance.
- Purchased trees may be removed from federal land for resale or private use. Limbs may be scattered off the area of disturbance but not dozed off.
- Chipped and scattered using the recommended method from the Fire Management stipulation above.

Pipelines:

- Trees will be dozed off the pipeline and windrowed. Following seeding the trees will be distributed throughout the disturbed area

30. The proposed 298-31-6, 298-27-7, 298-26-9, 298-26-8, 298-31-2, 298-31-3, 298-31-4, 298-31-5 well locations, access roads and well tie pipelines: The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

31. All exposed outcrops of the Uinta formation shall be examined by an approved paleontologist with the results of the examination and any recommended mitigation submitted to the BLM prior to the initiation of any construction.

32. If it becomes necessary, at any time, to excavate into the underlying rock in order to construct the access roads, level the well pads, excavate the reserve/blooi pits or bury the well tie pipelines a paleontological monitor shall be present before and during all such excavations.

33. The access road to the location in SWNW Sec 27 will require a cattleguard where it crosses the Square S/ Black Sulphur allotment boundary fence in the W1/2 SE1/4 Sec 21. In addition, all fences crossed by an access road to a well location, pipeline and/or gas plant will have a cattleguard installed and maintained to BLM specifications for the lifetime of the project. All cattleguard/fence work will take place prior to well location, pipeline or facility construction.

34. All roadside and well location cut and fill slopes will be revegetated immediately after construction with the seed mixture(s) specified in the conditions of approval. Such revegetation will be either temporary or permanent.

35. Any and all fences intersected by an access road or pipeline will be braced to BLM specifications prior to cutting. A temporary wire gate will be constructed. This work will take place prior to access road/ pipeline ROW construction.

36. Colorado One Call will be initiated before any excavation begins.

37. Construction for the pipelines should not begin until the associated wells are drilled or until authorization is given by the White River Field Office.

NAME OF PREPARER: Tamara Meagley

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL:


Field Manager

DATE SIGNED: 6/30/06

ATTACHMENTS: Location map of the proposed action.

Location Map of the Proposed Action CO-110-2006-111-EA

